

The First Civil War Photographs of Soldiers with Facial Wounds

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Abstract. During the Civil War, for the first time in medical history, a large number of excellent photographs were taken of many wounded Union and (to a lesser degree) Confederate soldiers by photographers assigned by their doctors or surgeons, or by photographers employed by the Army Medical Museum. The majority of these photographs demonstrating facial, head, and neck wounds have not been published since the Civil War, except for a few minor exceptions [3, 9]. The actual art of printing photographs in medical journals, daily newspapers, and magazines did not even begin until the early 1880s—almost two decades after the Civil War [24]. Any photographs that could be found in certain rare medical and surgical books during and immediately after the War were actually pasted into those books by their printers.

In *The Medical and Surgical History of the War of the Rebellion* (MSHWR) [30] all of the illustrative material are types of engravings, drawings, and illustrations made only as copies of actual Civil War photographs which had accumulated in the Army Medical Museum. During the 19 post-war years that the MSHWR was published in several editions, the technology was not yet available for these invaluable teaching photographs to be printed and published in their

original form, thus accounting for their only being available as engravings, drawings, and illustrations.

Beginning in November 1989, it was possible for us to choose from hundreds of actual photographs in the Otis Archives of the National Museum of Health and Medicine, those which we thought would be most suitable for publication in the pages of a 1995 medical journal for the first time in surgical history. It must be strongly emphasized that the vast majority of these photographs has never been widely available!

Neither of the authors was aware of how deeply our fellow Americans would become involved and interested in the Civil War until Ken Burns' superb television series entitled *The Civil War*, debuted, affecting not only the general public, but medical historians as well. It was in late 1988 that the photographic case-book of Gurdon Buck again came to the attention of Rogers when he had completed the historical biography of the centennial of the birth of Dr. Jerome P. Webster who first showed him a copy of this case-book when he was a medical student in October 1944 [21]. New Yorker Gurdon Buck (1807–1877) was probably the first in medical history to publish an article using an engraving illustration copied from a pre-operative daguerreotype of a patient upon whom he performed a leg-straightening procedure [3]. This was only six years after the daguerreotype photo was first described in France in 1839 [18].

It was soon learned that some of Gurdon Buck's wartime activities had been recorded at the Army Medical Museum in Washington, D.C. and the MSHWR in a chapter titled "Plastic Operations," in which 30 cases were reported by surgeons who attempted facial wound repair with the plastic surgery techniques then known [30]. Some photographs taken by Gurdon Buck and other surgeons, especially Reed B. Bontecou, are listed in the "Photographic Catalogue of the Surgery Section of the Army Medical Museum" in Washington,

Presented at The New York Regional Society for Plastic and Reconstructive Surgery and the Section on Plastic and Reconstructive Surgery, The New York Academy of Medicine, New York, NY, March 7, 1994, and at the 73rd Annual Meeting of the American Association of Plastic Surgeons, St. Louis, Missouri, May 2, 1994.

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D.C. [3]. These photographs are available in the present-day Otis Archives at The National Museum of Health and Medicine.

In evaluating the pre- and post-operative results of the use of plastic surgery flap techniques by Doctors McKee (Figs. 28–31), and Gurdon Buck (see Figs. 32–39), the reader must try to remember what plastic surgery was like during the Civil War, a time when skin-grafting procedures, Z-plasties, and most pedicle flaps were still unknown or undeveloped, and, therefore, unavailable to both American and European surgeons alike. The plastic surgery techniques that Gurdon Buck used in every conceivable modification, however, were only the simple or complex techniques of rotation, transposition, and/or advancement flaps, i.e., flap techniques, to reconstruct serious facial defects. These techniques had been described 25 centuries earlier by Sushruta, the Indian (C. 1000 B.C.) and almost a millennium later, by Celsus, the Roman [22].

As medical and photography historians, the authors are not aware of any other equivalent number of photographs taken during the Civil War depicting the facial deformities demonstrated herein. The pre-operative deformities and post-operative results are undoubtedly the first ever demonstrated in the history of photography notwithstanding the development of the daguerreotype, the heliotype, etc [18].

From the standpoint of photographic precision, detail, accuracy, and skill, these Civil War photographs can easily match those taken in France at almost the same period (1862) by G.B. Duchenne de Boulogne of the stimulation of facial nerves with electrotherapy [8]. His photographs are now considered one of the greatest highlights in the whole field of the general development of photography and, in particular, those having both medical and scientific interest.

For those of us interested in reconstructive plastic surgery and the aesthetic endpoint of all plastic and reconstructive surgery procedures, from an historical standpoint, there is no major book or paper in the medical literature that describes in any detail any plastic surgery which was performed during the Civil War with only rare exceptions [2, 12]. In the early 1860s, there was very little known about the plastic surgery techniques employed today. In neither the North nor the South, no surgeons existed who exclusively practiced plastic surgery. There were only several plastic surgery techniques used for repairing facial and other bodily defects, primarily the use of rotation, advancement, and transpositional flaps [22].

Skin grafting had not yet been described. The Z-plasty, first described during the late 1830s and later in the late 1850s, had not yet come into general, or even minimal, use [7, 15, 31].

The cause of infection was unknown. Pasteur only presented, for the first time, his studies on the role of bacteria in 1865 [11]. Therefore, infection ran rampant in most hospitals and in many surgical procedures. In

fact, there was a significant lag in the quality of medicine in the United States compared particularly to Germany and France in both the basic and clinical sciences at that time.

Asepsis was also unknown during the Civil War, and it was not until 1867 that Lister first described the need for aseptic techniques in surgery [11]. Civil War surgeons did not wear masks or sterile gloves and operating gowns; wounds were explored with dirty fingers. In performing amputations, the surgeons often used a single knife, wiping it off between amputations on an apron, pant leg, a piece of dirty towel, or a frequently used sponge. In the entire Civil War there were many more deaths caused by infections in the wounded and those operated upon, than there were fatalities on the battlefields in both the North and the South [1, 6].

Photographs of the wounded Civil War soldier were remarkable considering that photographs of such high quality had appeared only 22 years after the first report of the development of the daguerreotype in 1839. Photographic historians believe that the Civil War photographs shown in this article are some of the most expert and precise, considering the status of photography in 1861. These photographs will be confined only to facial injuries and only a very few of them show their ultimate repair. These injuries were caused essentially by musket balls and the even more destructive "minie" ball, the latter causing greater damage including the destruction of one eye, both eyes, and an assortment of tremendous facial defects that were covered heroically by the approximately 19 surgeons in the armies of the North somewhat familiar with plastic surgery techniques [30]. The photographs reproduced here will take us on a tour of the simplest to the most complicated facial wounds. It is not the intention of this brief historical report to describe in any detail the type of plastic surgery performed during the Civil War. *Civil War Faces: The Wounded*, a book forthcoming from the authors, will consider this subject in detail.

It should be emphasized at this point, however, that the general attitude during the Civil War, based on the teachings of the literature [4–6, 10, 12, 13, 14, 16, 17, 19, 25, 28], was that because wounds healed poorly and almost always with suppuration, primary suture of facial wounds was rarely performed or recommended [26, 27]:

Treatment of facial wounds in the Union Army consisted of cleansing the wound with removal of detached fragments of bones. Fragments attached by periosteum were replaced and adjusted. Hemorrhage was suppressed and controlled by the use of styptics. The soft parts were brought into as near apposition as was practicable through the use of adhesive straps and rarely with sutures. Now and then, by removing disorganized parts, and paring and approximating the sound tissues by twisted sutures, favorable results may be obtained. The wound was supported by a bandage. [26]

Gurdon Buck was one of the few Civil War surgeons

who knew anything about the proper and adequate use of advancement, rotational, or transposed flaps to cover large facial defects [23]. Fewer than 40 “plastic operations” were reported by surgeons of the North and the South. In only a few of these 40 operations were multi-stage flap operations performed whose purpose was to totally reconstruct a severely damaged face. In addition to Gurdon Buck, other pioneers of the field of plastic surgery during the Civil War include Culbertson, Gibson, Gouley, Keen, and McKee [26, 27, 30]. The few other surgeons mentioned in the “plastic operations” chapter of the MSHWR merely closed the more simple facial defects with the harelip pins and twisted sutures that were then still in common use [30].

Figures 1–31, on the pages that follow, represent part of the 400 Surgical Photographs (SP) held at the Otis Historical Archives (OHA) of the National Museum of Health and Medicine. They are also known as Photographic Series especially in contemporary Museum correspondence. Most of the entire group of these photographs was taken at the Army Medical Museum in the 1860’s and 1870’s to illustrate interesting surgical operations or difficulties. A certain number of the photographs were engraved to illustrate cases in the Medical and Surgical History of the War of the Rebellion (MSHWR). They were also bound in volumes of 50 to make an 8-volume set titled “Photographs of Surgical Cases and Specimens.” The first volume of 50 photographs was printed in an edition of 40 sets which were distributed to Medical Directors in the Union Army. The photographs in these volumes were pasted on pages of the volumes since the printing of photographs had not yet been developed.

By January 1869, the next 3 volumes containing photographs 51 through 200, along with the first volume, were being made available to interested parties, including the College of Physicians of Philadelphia and the Royal College of Surgeons in Dublin, Ireland. In 1881 the first 5 volumes were formally published as “Photographs of Surgical Cases and Specimens taken at the Army Medical Museum.” The final 3 volumes had apparently been published by late 1881 to complete the set.

The photographs were printed at different times from wet collodion glass plate negatives and show a variety of poses and re-touchings. Several of the negative plates are still maintained by the Otis Historical Archives. In some photographs with the same number the poses vary or are completely different, presumably printed from a different negative when the first glass plate was broken. Similarly, on some soldiers posing nude from the waist downward to demonstrate their lower extremity amputations or deformities, fig leaves had been discretely placed on some of the copies.

Let us now look at the wounded faces of the brave soldiers of both the North and the South and learn something about where they were wounded, how they were wounded, and whether or not they “recovered” from their wounds. In the briefest of captions which accompany each photograph, the abbreviation “GSW” refers to “gunshot wounds,” and “GSB” refers to “gunshot bullet.”

A much more comprehensive description of these Civil War cases and many others will be described by the authors in a forthcoming book, *Civil War Faces: The Wounded*.

CP-980

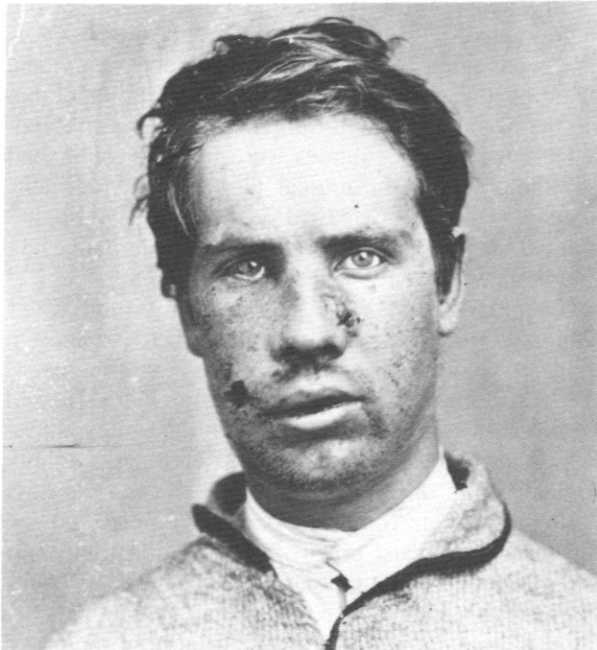


Fig. 1. Pvt. Robert Jenkins, NY. GSW of the face. Bullet entered left nasal cheek region and exited right cheek lateral to the oral commissure. "Recovery."

CP-912

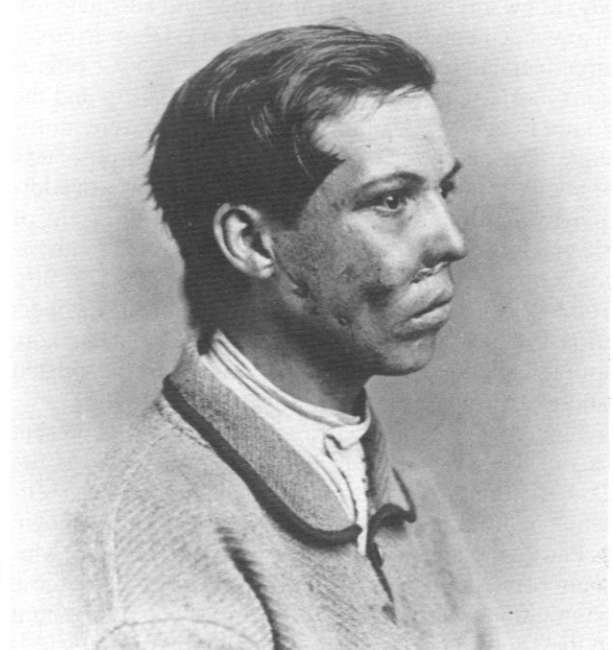


Fig. 2. Pvt. Henry Keil, NY. GSW (flesh) of the face involving right mandibular cheek tissue and base of junction of the right upper lip in the region of the right alar nostril floor.

CP-943

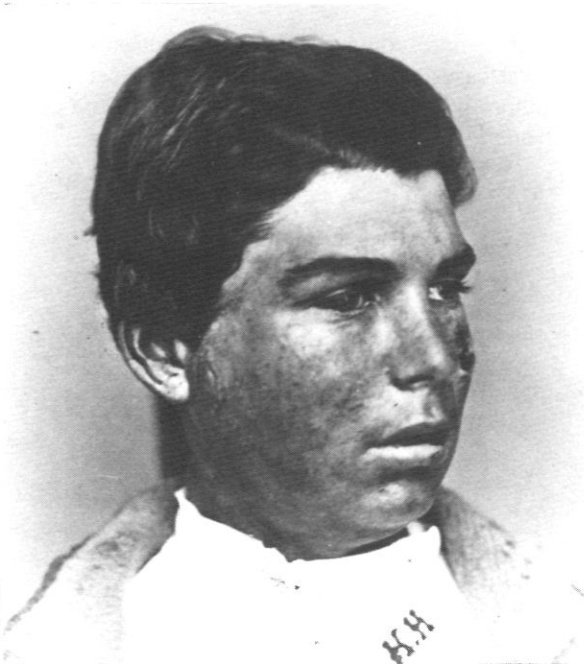


Fig. 3. Pvt. James Fergerson, NY. Wounded by a "minié" ball which entered anterior to the right ear, passed through the maxillary bones and made its exit from the face under the left eye. "Patient made a good recovery."

CP-981



Fig. 4. Pvt. George Andrews, NY. "Suffered a simple flesh tear of the left maxillary preauricular region including portion of the ear like a gaping, open trap door. Recovery."

CP-965



Fig. 5. Sgt. Andrew Wagoner, PA. GSW of left side of the face, the ball entering below the ear and passing out near the left chin. "Result favorable."

CP-978

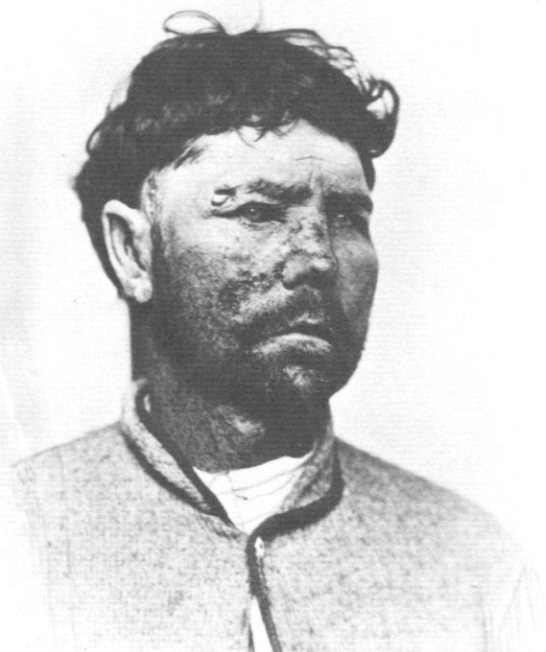


Fig. 6. Pvt. Nathan Henderson, MI. GS fracture of skull with multiple flesh injuries of the right eyebrow, right cheek, and nose region. "Recovery."

CP-934



Fig. 7. Pvt. Frank Eastman, NH. Shell missile entered the neck near the spinous process of the seventh cervical vertebra and emerged in front of the right ear. "The patient steadily improved from the first without any apparent constitutional disturbance. The wound . . . granulating finely."

CP-915



Fig. 8. Pvt. Jonathan Howard, PA. Sabre cut of scalp, fracturing the outer table.

CP-969



Fig. 9. Pvt. Walter Wheeler, NY. GSW of right scalp; the ball entered above the anterior zygoma and passed through the temporal fossa, emerging just above the external meatus, denuding the pericranium, with a fracture and depression of the temporal bone. "The patient is now doing well."

CP-946



Fig. 10. Pvt. Walter Wheeler, NY. Large defect of the right scalp bordering the forehead has gradually closed in the process of healing and the wound edges are coming closer together without any suturing or flap transposition.

CP-935



Fig. 11. Pvt. John Parkhurst, NY. GS fracture of the frontal bone, the ball fracturing the upper portion of the frontal bone. "Doing well." "Progress favorable."

CP-931

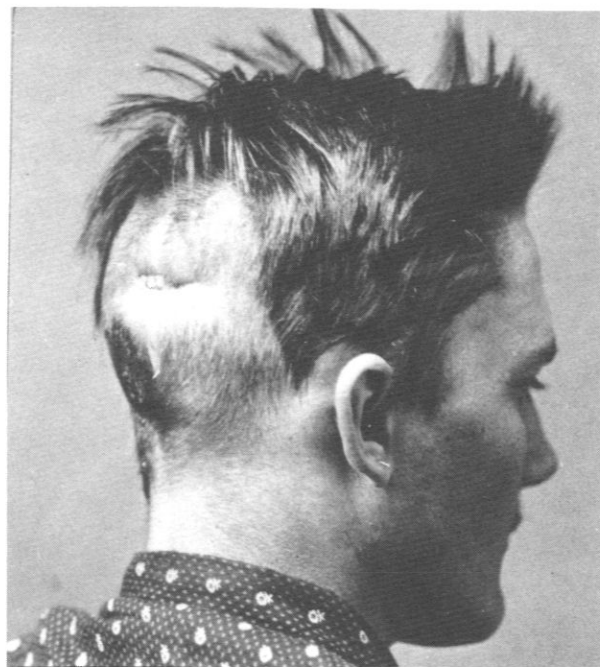


Fig. 12. Pvt. John Snyder, PA. Conoidal musket ball wounds of parietal bones with symptoms of brain compression which gradually subsided. The wound gradually cicatrized except at one minute point caused by communication with a small necrosed bone fragment.

SP-44



Fig. 13. Sgt. Samuel Wright, MA. A “minié” ball GSW of the right lateral eye and eyebrow region. The ball struck the right orbit fracturing the bone. The case progressed favorably and the patient made a good recovery.

CP-1144



Fig. 14. Pvt. James Wilkins, AL. A musket ball entered midway between the posterior line and the lobe of the right ear, fracturing the malar bone and exited at the outer canthus of the right eye. “Recovered.”

CP-951



Fig. 15. Corp. Thomas Mathews, PA. A “minié” ball entered behind the left ear, and exited below the left eye, fracturing the mandibular condyle and coronoid process, the zygoma, and left malar bones. Left face inflamed and swollen.

CP-952



Fig. 16. Corp. Thomas Mathews, PA. GS fracture of the left inferior maxilla and zygoma. Photograph taken in late spring, 1865, several years after facial injuries.

CP-944



Fig. 17. Pvt. Henry Morgan, NY. A "minié" ball GS entered the cheek, and the left superior maxillary bone, passing inwards and downwards into the mouth, destroying teeth of the left side. When admitted, his head and face were much inflamed with erysipelas. "The patient is . . . doing well" 2-1/2 weeks later.

CP-976



Fig. 18. Pvt. G.W. Preston, RI. GSW of the right upper eyelid and eye. "Recovery."

CP-1143



Fig. 19. Pvt. Calvin Genung, NY. GSW, ball entering between right ear and right outer canthus, fracturing the malar bone and destroying the eye completely, exiting from the orbit. Wound of entrance healed; continuous watery discharge from the orbit. "Recovered."

CP-957



Fig. 20. Pvt. David Templeton, NY. GSB hit left temple just back of the left eye's outer angle, grazing the malar bone and eyeball, destroying sight in the eye, exited producing a flesh wound of the tip of the nose. "He is now well."

CP-1318

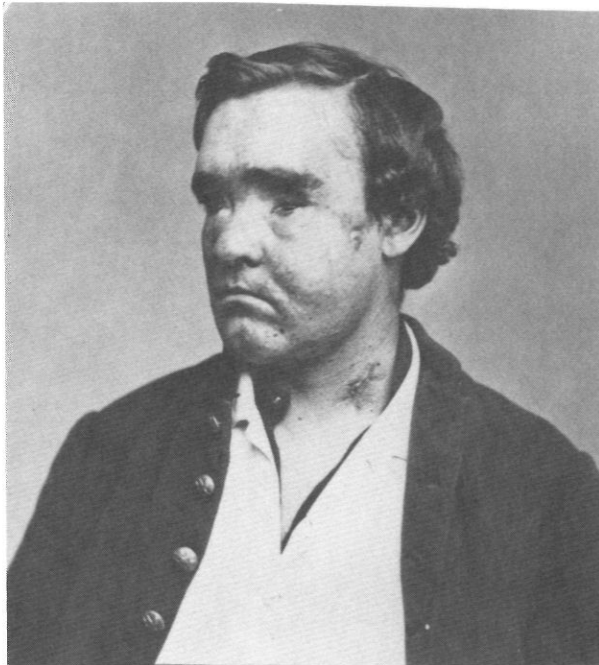


Fig. 21. Pvt. John Ames, NY. A conoidal ball entered beneath left malar bone, passed across through both maxillary bones and emerged below center of the left eye, destroying the eye, and fracturing the left nasal and superior maxillary bones. Because of hemorrhage, the left common carotid artery was ligated.

CP-1428



Fig. 22. Pvt. John Miller, NY. GSW resulting in total blindness with destruction of tissues of both eye and orbital regions from the line of entry through the line of exit.

SP-135



Fig. 23. Lt. Adam Miller, MA. GSB entered below the right orbit, traversed the nasal fossae, emerged thru the left orbit, destroyed the left eye and lacerated the left lower eyelid. A plastic operation restored the eyelid, permitting the insertion of an artificial eye.

SP-32

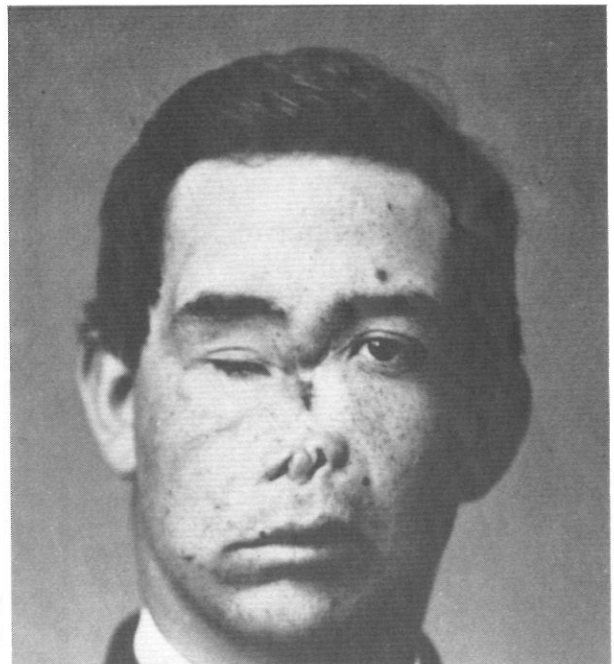


Fig. 24. Pvt. William Nims, NY. A shell fragment evacuated the humours of the right eye and fractured the nasal bones and right superior maxilla. The bone fragments were removed and the lacerated parts "adjusted."

SP-312

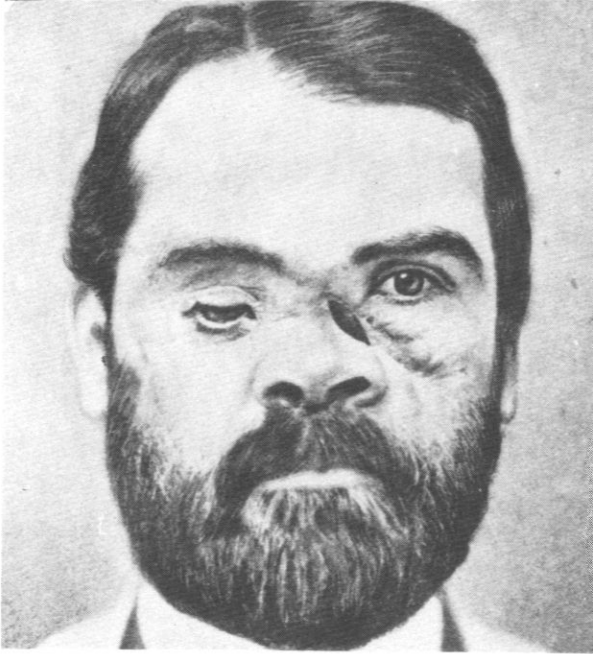


Fig. 25. Sgt. George Prince, NJ. A conoidal ball went just below the right zygoma, destroyed the right eye, passed through the nose destroying the superior and inferior turbinates, and emerged an inch below the left eye.

SP-79

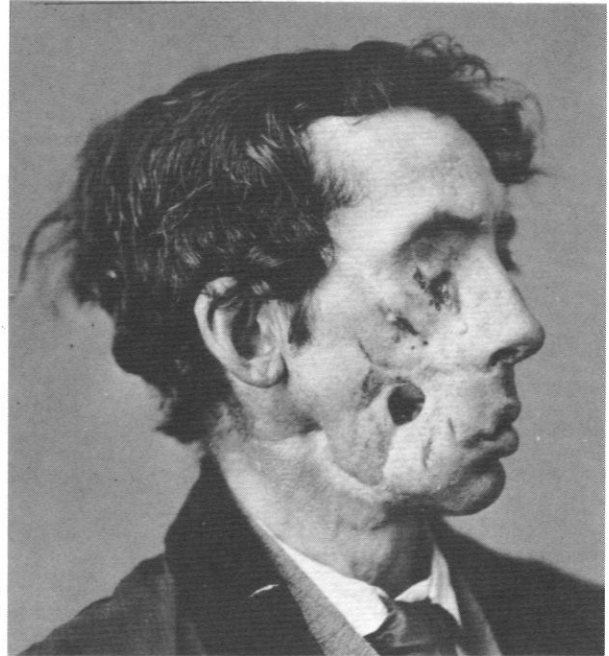


Fig. 26. Pvt. Joseph Harvey, NY. A shell fragment destroyed the right eye, fractured the right superior maxilla, chipped off a fragment of the lower mandible, and the right cheek was "frightfully lacerated" with resultant partial facial paralysis.

CP-1151

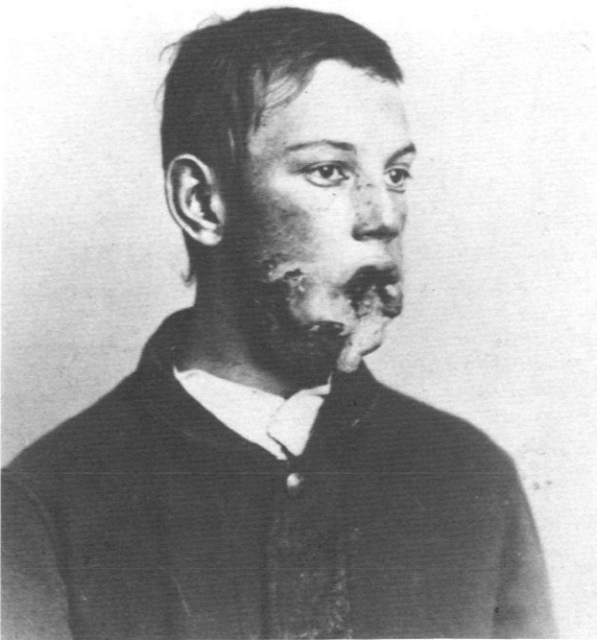


Fig. 27. Pvt. William Coder, PA. A shell fragment "carried away" the anterior portion of the inferior maxillary bone to within one inch of the ramus of the mandibles on both sides of the jaw. Only two molar teeth on the right and three on the left remained with integuments covering them. The wounds were granulating but somewhat impaired. A plastic operation was deferred! Patient "recovered." Can any readers of this journal imagine what a dreadful deformity occurred in this young boy with the healing of such a monstrous defect?

CP-1145

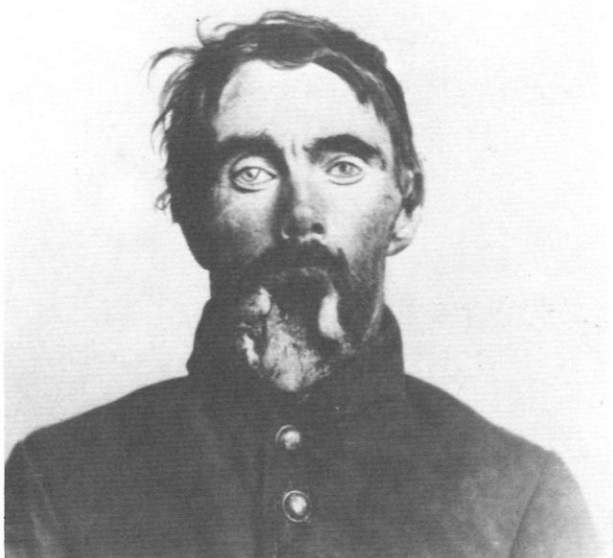


Fig. 28. Pvt. Rowland Ward, NY. A shell fragment destroyed the inferior maxillary bone and soft parts, carrying away the chin and all the soft parts down the neck, completely destroying the floor of the mouth with the tongue protruding and hanging down upon the neck.

SP-167

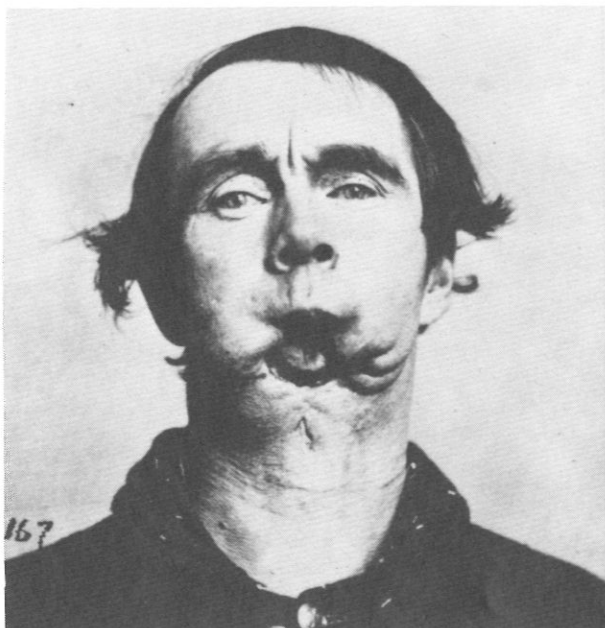


Fig. 29. Pvt. Rowland Ward. First operation constructed a floor for the mouth through various lateral incisions to create flaps, made down to the middle line of the neck. These flaps were brought together at the midline incision and secured by three harelip needles. The parts were supported by adhesive straps.

SP-168

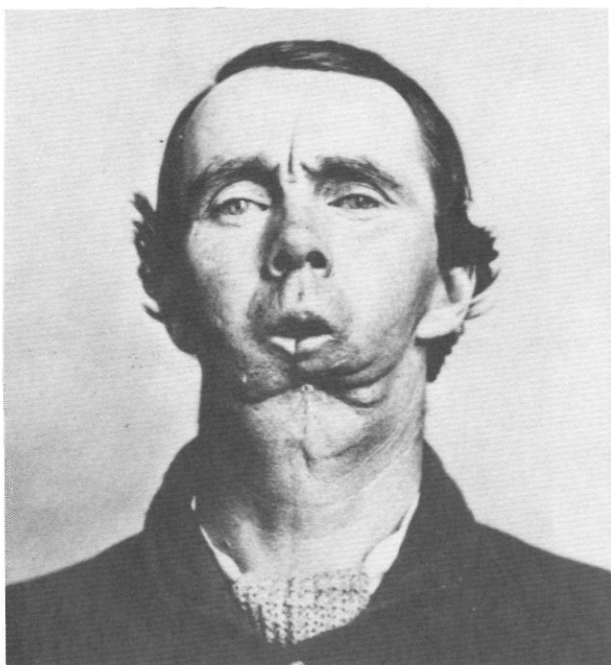


Fig. 30. Pvt. Rowland Ward. Further advancement and rotation flaps were raised from the adjacent normal and scarred tissue and the anterior edges of these flaps were freely incised, as well as the superior edge of those parts remaining after the first operation. The flaps were then brought into apposition.

SP-170

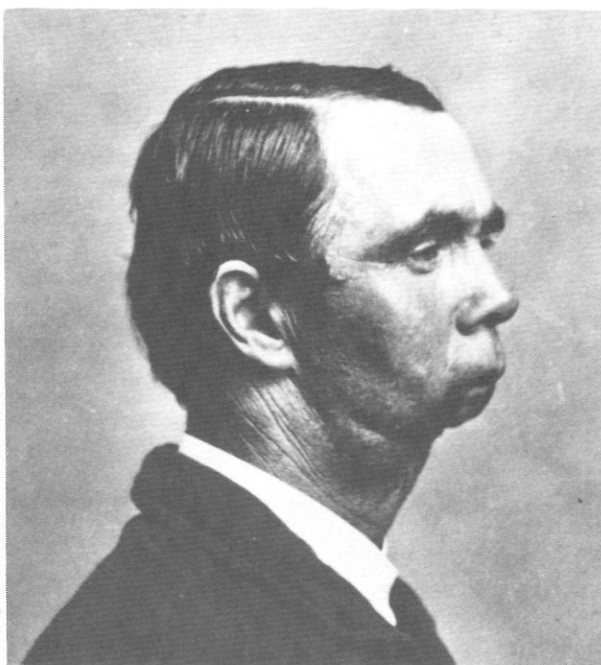


Fig. 31. Pvt. Rowland Ward. An even more favorable post-operative appearance following the second operation. Prior to this operation, he assumed a recumbent position to receive his nourishment or even a swallow of water. Postoperatively, he was gradually able to take his food and water without any difficulty. Surgeon was J. Cooper McKee.

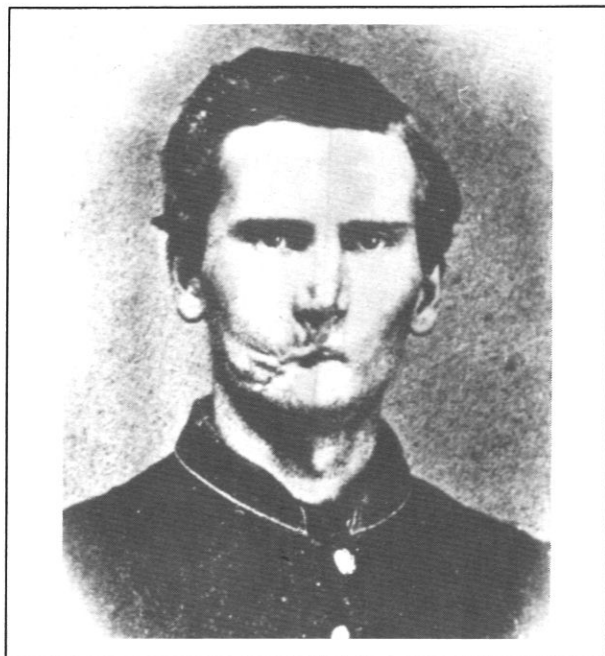


Fig. 32. Pvt. William Semmons, NY. Shell fragment defect of right cheek, mandible, and lower lip.

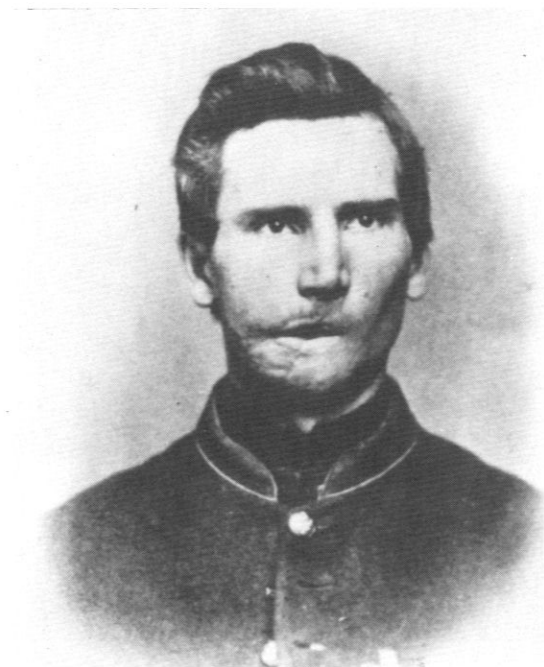
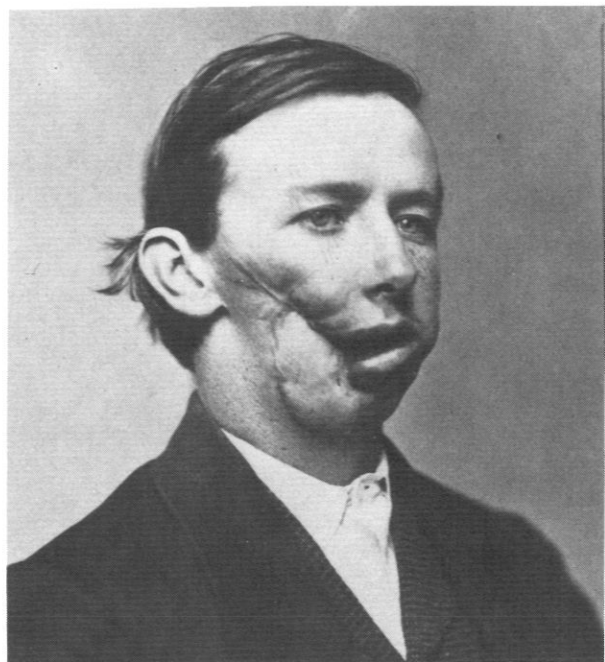
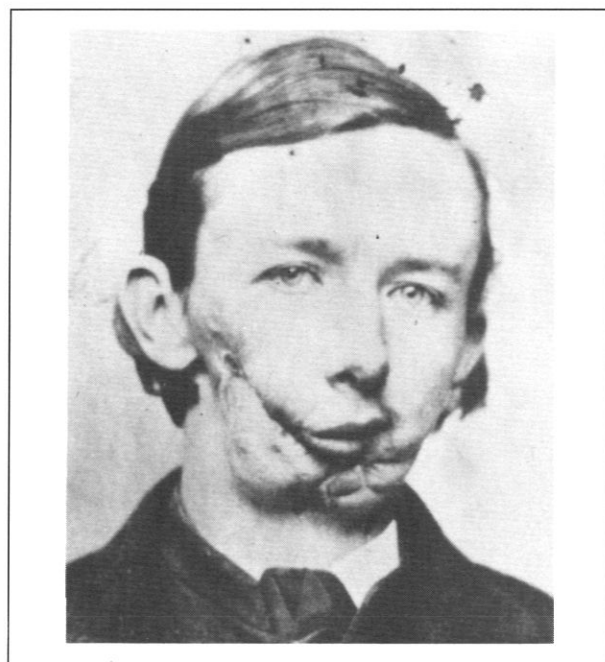


Fig. 33. Pvt. William Semmons, NY. Postoperative result after one operation on right oral commissure by Gurdon Buck [23].



CP-1311

Fig. 34. Pvt. Elbert Hewitt, VT. Preoperative. Shell wound defect of right cheek, lips, and mouth.



CP-1312

Fig. 35. Pvt. E. Hewitt, VT. Postoperative results after two procedures to restore mouth symmetry showing obliteration of the notched right oral commissure deformity. Surgeon was Gurdon Buck [23].

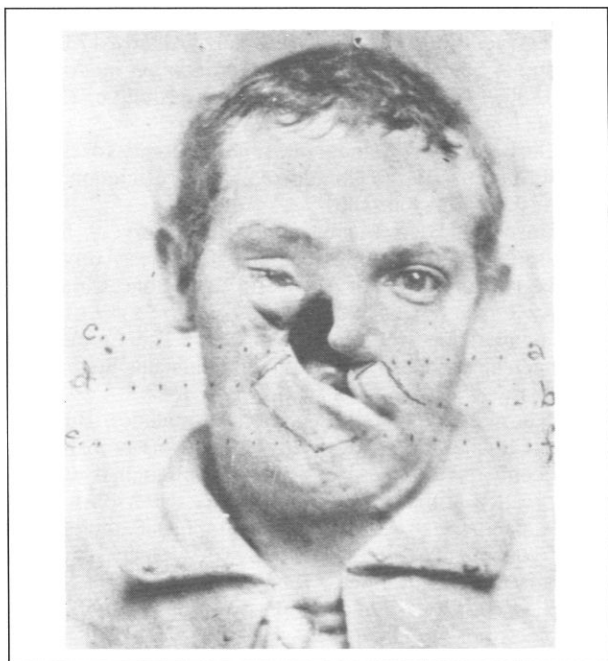


Fig. 36. Pvt. Carleton Burgan, MD. Patient with loss of upper maxilla and soft tissues from sloughing caused by an overdose of mercurial medications. A flap from the lower lip and cheek was rotated upon its vermillion pedicle to reconstruct the oral commissure.

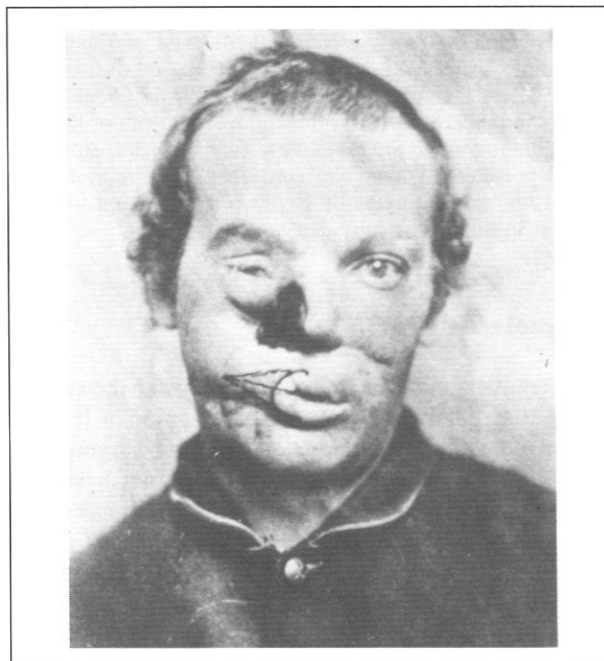


Fig. 37. Pvt. Carleton Burgan, MD. The commissure of the mouth was widened upon the right side by incising the cheek and everting the mucous membranes.

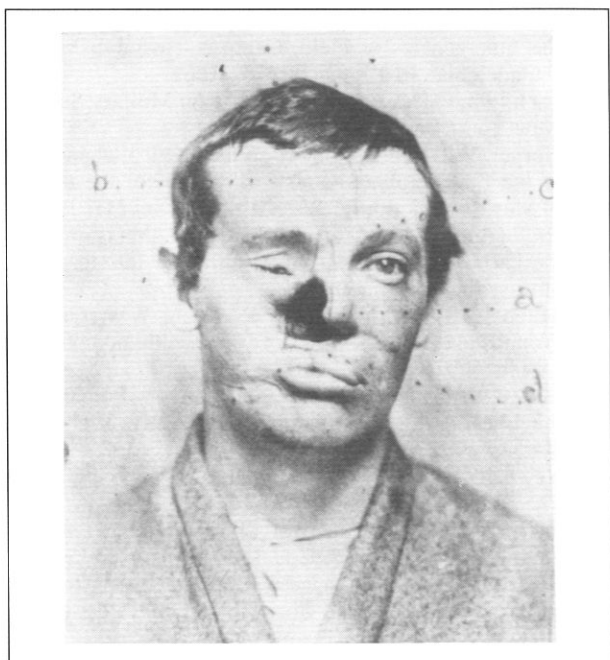


Fig. 38. Pvt. Carleton Burgan, MD. A median forehead flap was turned downward to cover the defect of the nose.

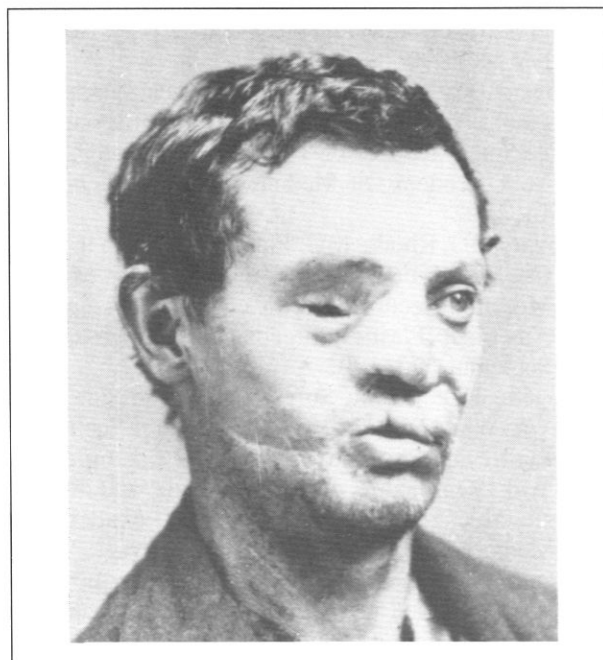


Fig. 39. Pvt. Carleton Burgan, MD. Postoperative view of the patient's face following reconstruction. Surgery performed by Gurdon Buck [23].

Acknowledgments. All photographs were provided by the Otis Historical Archives, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Walter Reed Army Medical Center, Washington, D.C. Additional photographs in this article were prepared by members of the Don Allen Photographic Studio in New York City, and especially by its president, Wayne Pearson. To all of the aforementioned, the authors extend their deep appreciation for their interest in this historical paper.

Appendix

It was only natural that this contact between the authors led in the years following 1989 to a series of lectures given to medical historians and plastic surgeons on the existence of these photographs of facial wounds briefly described here, and on the contributions of such famous Civil War surgeons as Gurdon Buck, Reed Bontecou, J.C. McKee, and others. This series of lectures is listed here:

Rogers, BO: The first pre- and post-operative photographs of plastic and reconstructive surgery: Contributions of Gurdon Buck (1807–1877). Lecture: Annual meeting of the Northeastern Society of Plastic and Reconstructive Surgeons, Newport, RI, October 6, 1989

Rogers, BO: Gurdon Buck and the world's first pre- and post-operative plastic surgery photographs. Lecture: The Second Italian and American Congress of Plastic Surgeons, Venice, Italy, September 24, 1990

Rogers, BO, Rhode, MG: Gurdon Buck: First photographs of Civil War and mid-19th century surgery. Lecture: Section of Historical Medicine, New York Academy of Medicine, New York January 14, 1992

Rogers, BO, Rhode, MG: Plastic surgery in the U.S. Civil War: First cases from the Army Medical Museum. Lecture: Third Congress of Italian and American Plastic Surgeons, Washington, DC, September 27, 1992

Rogers, BO: Plastic Surgery Repair of the Civil War Wounded (1861–1865). Lecture: Section on Plastic and Reconstructive Surgery, and the New York Regional Society for Plastic and Reconstructive Surgery, the New York Academy of Medicine, New York, March 7, 1994

Rogers, BO: Plastic Surgery Repair of the Civil War Wounded (1861–1865). Lecture: The 73rd Annual Meeting of the American Association of Plastic Surgeons, St. Louis, MO, May 2, 1994

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